THE PLANT DISEASE REPORTER

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The Plant Disease Survey

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THE PLANT DISEASE SURVEY

Vol. VIII October 15, 1924 Number 9

AN OMISSION

On page 106 of the last number of this publication (No. 8, October 1) the word "cowpea" was omitted from the first note on the page. The powdery mildew that is severe in parts of South Carolina is on cowpea.

BLACK BUNDLE OF CORN

"During a recent tour through southeastern, southern, and southwestern Illinois I found very heavy infections of the black bundle disease of corn. It was my observation that the Illinois Plant Disease Survey did not report this infection any too high. (Plant Disease Reporter 8: 97, October 1, 1924) This year it seems to be the prevailing corn disease in that territory." (J. R. Holbert, Oct. 7)

CORN SMUT INFECTION LIGHT IN ARKANSAS

"Unlike most years, there was but little smut on sweet corn this year. Field corn showed heavier infestations, but even it was less affected than usual."(Department of Plant Pathology, Oct. 1)

CORN RUST REPORTS FROM ILLINOIS AND ARKANSAS

Illinois: Corn rust occurs as a few (sometimes many) pustules on most of the stalks in most fields in the northern half of the state and in most fields on a smaller percentage of the stalks in the southern half. Two fields of sweet corn were seen to be heavily rusted. None of the corn rust seen appeared to be doing appreciable damage. (Paul A. Young, Sept. 21)

Arkansas: Common, but doing very little damage. (Rosen, Oct. 1)

DIPLODIA ON CORN

Reports needed on dry rot situation this year

How much dry rot of corn caused by *Diplodia zeae* is there this season?

Only a comparatively small number of reports have come to our attention as yet. It is understood that the condition of the corn crop in general is poor on account of various causes. How much of a factor is Diplodia in this deterioration, and what proportion of the harvested ears will carry the infection?

On September 1, C. W. Edgerton of Louisiana reported considerable infection on weakened stalks. He said that dry weather seemed to have weakened the stalks and made them more subject to attack.

YELLOW LEAF SPOT OF CORN

A condition that has been noted in several states and by numerous workers is reported on October 1 by H. R. Rosen from Arkansas as follows:

> "Certain plants noted in Mexican June variety of field corn in which every leaf showed numerous small, oval or roundish spots, yellowish in color, and with a margin appearing water-soaked. The disease seemed to be confined to certain plants, and no spreading was noted to adjoining plants. It resembles the trouble recently described by Emerson (Cornell Univ. Memoir 70, 1923.)"

RICE DISEASES IN ARKANSAS

This summer, V. H. Young of the Arkansas Experiment Station has paid particular attention to rice diseases and has collected considerable information concerning them both through field survey and questionnaire. He gives us the following information as of October 1.

> Rotten neck (Piricularia oryzae) -"Leaf spotting caused by this fungus common, and also discoloration of glumes. Little true "rotten neck" noted. Dry season apparently not favorable. Not important this year or last year."
>
> Straighthead (Improper soil aeration) - "Much less common than last year due to proper drainage of suspected fields and the dry season which prevented over irrigation. Loss inconsiderable."
>
> Stem rot (Sclerotium oryzae) - "Stem rot accompanied by lodging and failure of heads to fill found in several fields near Stuttgart, Carlisle, and Lonoke. Sclerotium oryzae present in all cases. One case of a loss of at least 50% of crop on a field of eighty acres noted. Noted on most of the important varieties."

Leaf spot (Helminthosporium sp.) - "Considerable leaf spotting and darkening of glumes appears to be associated with a Helminthosporium. Appears to cause little loss."

COVERED KERNEL SMUT OF MILO

In the last number of this reporter W. H. Tisdale called our attention to the fact that milo, which heretofore has been considered resistant to the covered kernel smut Sphacelotheca sorghi, has of late been showing considerable infection. Since that note was written Tisdale has been into some of the milo sections in Kansas, Oklahoma, and Texas and now returns with the report that milo is showing a considerable amount of this smut and that it is also occurring on feterita and hegari, both of which are in the same group with milo. It was at first thought that the reason for this comparatively sudden appearance of the smut on milo might be due to the crossing of milo with other sorghums. Tisdale's investigations, however, do not support this possibility.

We would again request our readers to furnish reports and specimens of this disease when conditions permit.

SCLEROTIUM ROLFSII ON SOYBEAN

Mississippi: This disease has not been reported on soybean in this state in previous years. It was first reported and observed this year on August 18, and since then we have received specimens from many different sections of the state and it appears to have been epidemic in some localities.

We observed a probable loss of 25% in one field in Oktibbeha County. (Neal and Wallace, Sept. 1)

STATUS OF DUSTING FOR APPLES IN THE WINCHESTER SECTION OF VIRGINIA

"The commercial orchardists who have used dust on apples this year are reported to be very much dissatisfied with the results obtained. The dust has not only failed to control scab but has fallen down badly in codling moth control as compared with results obtained by spraying. In one large orchard, which received a full program of dust, there are not enough apples free from worm injuries to supply facers for the barrels. In another orchard of Black Twigs which received seven sprays and seven dusts under comparative conditions

(the dust being applied according to the advice of the dust salesman). There is only 5% of blemish-free fruit in the dusted block as compared with 85% in the sprayed block. The injury is chiefly due to scab. The owner will not even run the dusted apples over the grader." (Fromme, Oct. 1)

APPLE SCAB LIGHT IN WESTERN WASHINGTON

"This disease has been very light in Western Washington where it is usually especially abundant. The scarcity of the disease correlates with the extremely dry season. In the central irrigated valleys we do not have scab on either apples or pears. In the eastern part of the state scab has not occurred in appreciable amounts since the seasons of 1916 and 1917 when the disease was abundant." (Division of Plant Pathology, Sept. 23)

APPLE DISEASES IN ARKANSAS

The Department of Plant Pathology of the Arkansas Experiment Station at Fayetteville reports as follows concerning Arkansas apple diseases as of September 1:

Scab (Venturia inaequalis - "Considerable infection on leaves with both early and late infections. Amount on fruit about the same as last year. Very little except on susceptible varieties."

Bitter rot (Glomerella cingulata) - "Common but not severe as compared to last year, except in isolated localities and in southern part of state."

Black rot (Physolospora cydoniae) - "Rather prevalent and causing more damage than last year. Increase in amount of worm injury partly responsible. Frog-eye leaf spot prevalent and appearing earlier than usual. Rot especially bad on crab apples."

Blotch (Phyllosticta solitaria) - "Very abundant on sprayed trees. Thorough spraying gives excellent control."

Rust (Gymnosporangium) - "Very severe where cedars are common. Almost no orchards free, indicating that cedar eradication is nowhere thorough. Much defoliation on susceptible varieties among which Ben Davis, Jonathan and Bell Flower were noted. Said to be the worst attack in years."

Blight (Bacillus amylovorus)- "Extremely severe as reported earlier in season."

Sooty blotch (Leptothyrium pomi) - "Very common and abundant on unsprayed fruit."

Bitter pit - "Common, especially on Grimes Golden."

Blister canker (Hummularia discreta) - "Very prevalent in old, neglected orchards, especially on Ben Davis."

Phoma spot (Phoma pomi) - "Very little present this year."

Brown rot (Sclerotinia sp.) - "Very little present."

BITTER-PIT OF APPLES

Readers of this note will be contributing greatly to the helpfulness of this leaflet by reporting on the prevalence of bitter-pit in apples this year, particularly from the more important apple producing centers. It would be very helpful to those who handle the harvested crop to know how much bitter-pit they might expect and in what varieties.

We have just noted a report in a news letter of the Bureau of Agricultural Economics by a market inspector who makes mention of having received two cars of apples from the Willamette Valley which were affected with bitter-pit to the extent of about 20%. He says further that the disease is very prevalent in Western Oregon apples this year, the season having been very dry.

RED LEAF OF PEAR AS IT IS OCCURRING IN NEW YORK

This disease of unknown cause is reported on September 15 by E. F. Guba as follows:

> Observed wherever pears are grown and particularly common to the Kieffer variety. Made its appearance in September this year, much later than in 1923. The disease is dreaded by growers since affected trees rarely recover. About .5 to 1% of Kieffer pear trees in New York State affected with "red leaf."

PEACH BLIGHT IN MICHIGAN

Specimens of Coryneum beijerinckii Oudem. on peach from Michigan have

been received by the Survey for the first time. The disease has been reported occasionally from that state and from a few of the eastern states but it is by no means common in the East. Concerning the Michigan outbreak, C. W. Bennett, writes as follows on September 1:

> "This disease has recently been discovered in one orchard in Mason County. This orchard had a severe attack on fruit, leaves and twigs. The fruit is badly spotted, and will probably not run more than 20% clean. Defoliation has not been excessive though "shot hole" is abundant. Approximately 25% of the twigs are dead. The owner estimates his loss at two thirds of his crop. This was one of the few orchards of the county in which leaf curl was satisfactorily controlled."

PEACH RUST

John C. Dunegan of Fort Valley, Georgia now furnishes the following note concerning peach rust, (Tranzschelia punctata) in Georgia. The Survey has not received reports of this disease from any other state this year, and we would ask you again to send in any negative as well as positive observations.

> "I have never collected stages 0 and I on Ranunculaceae in this district although I have looked for them every spring. The hosts themselves are apparently very uncommon in the vicinity of Fort Valley.
>
> "Stage II has occurred in 1921, 1922, and 1923 very abundantly on all varieties of peaches. The first infections appear about the middle of August and toward the end of the season practically all the leaves are infected. A limited number of counts have revealed as many as 250 to 375 pustules per each leaf.
>
> "In 1924 stage III was collected from the leaves of a seedling peach on May 21. The infection was quite recent as many of the peridia were not ruptured. The spores were mature however, as they germinated readily in sterile tap water. This was the earliest date I ever collected this stage and I thought we could look for widespread infection and possibly some injury, due to its early appearance, but since that date no further collections have been made."

NEW YORK AND ARKANSAS REPORT ON GRAPE DISEASES

Black rot caused by Guignardia bidwellii

New York: First report from Dutchess County July 24, 1924. Estimated loss in this particular vineyard about .05%. So far, no serious losses have been observed or reported. Only noted in traces, in locations were atmospheric drainage is poor. (Guba, Sept. 15)

Arkansas: Severe on unsprayed vines. Causes almost complete loss in many home vineyards. Loss where thorough spraying is carried out is not serious. More severe than last year on unsprayed or poorly sprayed vines. (Dept. of Plant Pathology, Sept. 15)

Downy mildew caused by Plasmopara viticola

New York: First report from Dutchess County, July 7, 1924. So far no serious losses have been noted or reported. The disease has been observed in traces in locations favorable for the development of mildew. (Guba, Sept. 15)

Arkansas: Present but not causing serious loss so far as observed. (Dept. Plant Pathology, Sept. 15)

Powdery mildew caused by Unicinula necator

New York: First report from Essex County, July 30, 1924 on white grapes. Severe infection noted. (Guba, Sept. 15)

Tar spot caused by Rhytisma vitis

New York: First report from Columbia County, August 7, 1924. Also reported from Dutchess and Ulster Counties. Present where grapes are grown but never serious enough to be of any economic importance. (Guba, Sept. 15)

Root rot possibly caused by Armillaria mellea

Arkansas: Caused considerable injury in vineyards on recently cut-over land where stumps of oak, hickory, etc. are present. (Rosen, Sept. 15)

Lightning injury

Arkansas: Considerable injury noted in one instance where vines were in contact with wires for distance of a hundred yards and also in a localized area around the point where lightning struck. (Rosen, Sept. 15)

COTTON DISEASES

Anthracnose caused by Glomerella gossypii

Virginia: Reported to be quite general in the vicinity of Holland. Losses at the Branch Experiment Station amounted to 50% in the Trice variety. (Fromme, Oct. 15)

Mississippi: Even though we have had an exceptionally dry season we have had quite a bit of anthracnose. We have had several reports but in no locality was anthracnose reported as being

very serious. Reports from the following counties have been received: - Warren, Hinds, Lauderdale, Lawrence, Neshoba, Tallahatchie, Oktibbeha, Yazoo, and Le Flore. (Neal and Wallace, Sept. 15)

Arkansas: Very little boll rot of any kind, including anthracnose. Some present in central and eastern part of state.

Wilt caused by Fusarium vasinfectum

Mississippi: The dry weather which prevailed in the state throughout the summer, contrary to our expectations, seems to have lowered the resistance of the different varieties and there has been a general infestation of wilt.

Wilt has been reported from the following counties: Washington, Humphries, Montgomery, Marshall, Sharkey, Holmes, Tippah, Lee, Madison, Lawrence, and Tunica. No doubt it occurred in many other counties and was not reported. (Neal and Wallace, Sept. 1)

Texas: Fairly distributed in light sandy loams. Two percent loss. (Taubenhaus, Sept. 1)

Arkansas: Very prevalent in many parts of the state. Seems to be associated with ecological conditions, possibly lack of rain. Very variable amounts of damage in different localities. Some locations where injury was severe last year show little injury this year. As high as sixty percent of the plants killed in a few cases. (Dept. of Plant Pathology, Sept. 1)

Angular leaf spot caused by Pseudomonas malvacearum

Mississippi: Reported July 7, from New Albany, Union County, Mississippi. Reported August 5, from A. & M. College, Station farm. Reported from many other sections of the state and observed in most every field examined. Largest amount of infection was on the leaves. (Neal and Wallace, Sept. 1)

Arkansas: Prevalent in some of the western counties, especially Crawford. Very little throughout the state. (Dept. Plant Pathology, Sept. 1)

Root knot caused by Heterodera radicicola

Mississippi: Reported August 30, from Winterville, Washington County. Slight damage. Neal, Sept. 1)

Arkansas: Commonly present in lighter soils, often complicating the wilt problem. (Dept. of Plant Pathology, Sept. 1)

Alternaria leaf blight caused by Alternaria sp.

Mississippi: Reported August 30, from Winterville, Washington County, and Holly Springs, Marshall County.

Reported and observed at A. & M. College, on station farm during the latter part of August and first of September, where it completely defoliated some of the fields but apparently did no damage because of the fact that the cotton was practically mature when attacked. (Neal and Wallace, Sept. 1)

Arkansas: Very common, apparently secondary to red-spider, drouth injury, and potash hunger. (V. H. Young, Sept. 15)

Texas root rot caused by Phymatotrichum omnivorum

Texas: Not so prevalent on account of dry season; 8% loss. (Taubenhaus, Sept. 1)

COTTON RUST

Specimens of the cotton rust (Aecidium gossypi) have been received recently in the Office of Cotton, Truck, and Forage Crop Disease Investigations from near Postvale, Arizona. The disease seemed to be causing some local damage earlier in the season, according to the collector, W. D. Pierce.

LATE BLIGHT AND ROT OF POTATOES

Questions of vital importance to growers and to those who market the potato crop are how much rot is there in late potatoes this year; how much will it affect the market; and how are potatoes going to keep? Blight of the vines has occurred scatteringly, and in some places generally, in several of our important potato producing states, but how much rot has resulted therefrom is the question. Collaborators are asked to take steps to determine the amount of rot in the crop that is being harvested, and to send the results to the Plant Disease Survey, where the data will be summarized and issued in future numbers of this publication.

Donald Folsom of the Maine Experiment Station reported as follows concerning the occurrence of late blight in his plots as of September 25:

"Following a dry season, the first week of September was favorable and foliage infection appeared suddenly and generally

over untreated plots. About 1% of the plants in alternating, triplicated dusted plots were infected with a spot per plant, and control by spraying was complete up to September 20, at least. At the date of appearance, killing frost has occurred in some years. As to possible primary sources of infection, the soil had not been in potatoes the preceding two years in a half mile radius from these plots. Earlier infection was not present within a mile radius; the stock had no observed foliage infection the preceding year and very few apparently infected tubers, which were discarded. A number of late blight tubers, partly infected, were planted whole or halved in an adjoining plot."

POTATO MOSAIC IN MAINE

"First appearance delayed by dry season. Toward end of the season lower temperature and increased humidity apparently caused symptoms to be unusually distinct for this time of year. The four types perpetuated in the same stocks, or transmitted to new stocks, retained their distinctive characteristics, and were also found in commercial fields. The average percentage in commercial fields apparently has decreased because of more general use of certified seed." (Folsom, Sept. 15)

DO NOT CONFUSE THE FUSARIUM WILT OF TOMATO WITH THE GRAND RAPIDS DISEASE

Miss Mary K. Bryan, who recently returned from a trip to Ohio and other states, calls our attention to the fact that the diseases caused by Fusarium lycopersici and Aplanobacter michiganense may be confused in the field and that sometimes both diseases occur on the same plant. She writes as follows on October 6:

"Studies in the field in several states during September have shown that the Grand Rapids disease of tomatoes is present in proportions varying from 5 to 25% in certain fields where the Fusarium wilt is severe. At this time the two diseases are not easily distinguishable by external symptoms. Field diagnosis may be readily and correctly made, however, by a cross section of the upper stem. In Fusarium wilt a dark brown color occurs in the vascular ring, while in the Grand Rapids disease there is no brown discoloration but pale yellow or whitish areas of tissue occur in the vascular region and extend from it into the pith and cortex.

"Two fields near Cleveland, Ohio, were severely infected with both diseases. Both diseases are sometimes found in one plant. This is the first report of the occurrence of the Grand Rapids disease in the field in Ohio."

PHYTHPHTHORA INFESTANS ON TOMATO IN VIRGINIA

"I visited a five acre field of tomatoes at Hoges Store, Giles County, on September 30 that is as near a total loss from late blight as anything I have seen. The farmer harvested only five bushels of sound tomatoes from the entire field, and the infection at the time of my visit is as near 100% as it is possible to attain. Late blight has been general in the canning crop of this locality and the loss will average 50%. Infection first appeared about August 1, and by August 15 it had become general enough to attract the notice of the growers." (Fromme, Oct. 1)

FUSARIUM WILT OF TOMATO

Mississippi: Reported August 7, from Merigold, Bolivar County. (Neal, Sept. 1)

Texas: Generally distributed; 30% loss. (Taubenhaus, Sept. 1)

Arkansas: Rather prevalent over the state. Severe in many sections in the southern part of the state and in the canning section in the northwest part of the state. Often accompanied by nematode injury. Wilt resistant tomatoes holding up well in all parts of the state. (Dept. of Plant Pathology, Sept. 15)

SEPTORIA BLIGHT OF TOMATO

F. J. Pritchard of the Bureau of Plant Industry reports much less Septoria blight at the Department of Agriculture Experimental Farms (Arlington Farms) this year, there being only a mere trace of the disease. He attributes this decrease to low temperatures and mentions the fact that he found considerable amount of this disease in the southern states this year, especially in Alabama, a region where it usually develops very little. Reports from other states are:

Michigan: In general, this disease will cause little damage to the tomato crop this year. The crop is very late and the weather has been very unfavorable for growth. Although the rainfall has been abundant and infection fairly well established, the fungus has made but little headway, probably due to the influence of the adverse conditions upon the growth of the host plant. (Nelson, Sept. 15)

Wisconsin: More than usual. (Vaughan, Sept. 15)

South Dakota: Very severe attacks causing losses, in gardens and fields, of from 10 to 50%. Data from eastern half of the state. (Petry, Sept. 1)

Kansas: General in its appearance and again of quite alarming proportions. This disease is the only foliage disease in Kansas that causes us any trouble. First appeared on June 20 on plots at Manhattan. Caused considerable defoliation here. (White, Sept. 15)

Arkansas: Quite prevalent over the state but only rarely causing damage. (Dept. of Plant Pathology, Sept. 15)

NOTES ON NEW YORK ONION DISEASES

A. G. Newhall, Department of Plant Pathology, New York State College of Agriculture, on September 15 sent in the following statements concerning the onion diseases in New York:

Mildew (Peronospora schleideni) - Worse than it has been in nine years, to my knowledge, and probably much longer. Unusually widespread and early in appearing, due to cool July with plenty of rains.

Reduction in yields probably average 12 to 20%. In some cases I know, they were 50% or more on new muck.

Pink root (Fusarium sp.) - Less than for the past two or three seasons, due to cool weather and frequent rains. On the other hand, maggot and smut being worse than usual. Pink root has been common enough on onions affected with either of these. Estimated loss on average, 5%.

Brittle? (Fusarium sp.) - Noted in two fields in Wayne County, and one at Elba, in June-July which had the ear marks of Cook's disease by this name. A Fusarium was cultured from the much coiled leaves. Both leaves and root tips were brittle and the latter were swollen though not discolored.

Macrosporium rot (Macrosporium parasiticum) - Like mildew, came earlier than usual and was more common than I ever knew it to be. Doubtless it was partially responsible for the estimated 12-20% loss from mildew.

Smut (Urocystis cepulae) - Worse than in the past two years due to the cold, wet, backward spring which prolonged the seedling period. Many fields in Wayne County plowed up in June.

The shifting of the crop to newer muck sections, use of more seed per acre and formaldehyde and growing of onion sets where smut infested land is still employed for onion raising have all contributed to minimizing losses from smut. So I would place it at 10% of total crop even though it has been an extra bad smut year.

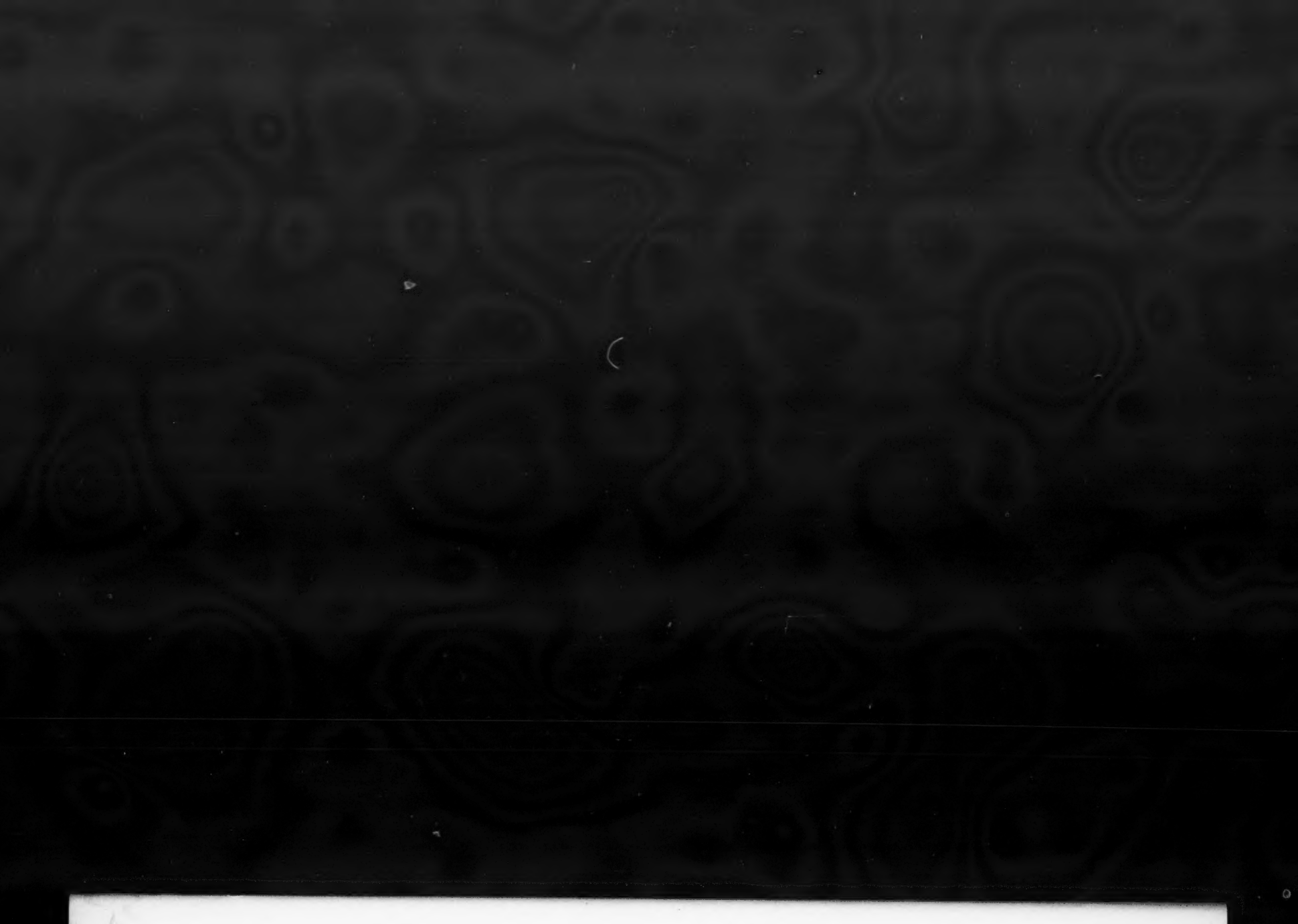
ONION BULB ROT (FUSARIUM SPP.) IN WASHINGTON STATE

"This disease, the same as has been under observation in the Walla Walla section for a number of years, is present in serious amounts this season on the "Walla Walla Yellow" onion. Losses are increased by cultural and harvesting practices. (Div. of Plant Pathology, Sept. 23)

CLADOSPORIUM CUCUMERINUM ON CUCUMBERS AND MUSKMELONS

According to Charles Chupp this disease is apparently much more severe in New York than it has been in recent years, at least many more specimens than usual have been received by him for identification.

LEAF BLIGHT OF GLADIOLUS NOW REPORTED FROM NORTH DAKOTA AND MINNESOTA

"The leaf blight of gladioli caused by Bact. gummisudans, first reported in 1922 from Ovid, Michigan, has been found this season on gladioli from North Dakota and from Michigan. That from North Dakota was from Abercrombie, and on varieties Dr. Van Fleet and Golden Butterfly. The Minnesota material was sent in my Louise Dosdall of the University of Minnesota, who reported that the infection was particularly heavy on varieties Flora, Willie Wigham, and Pride of Goshen. (McCulloch, October 7)

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